REMARKS

Claims 23-48, as amended for form, are the only active claims pending in this application. The foregoing separate sheets marked as "Listing of Claims" shows all the claims in the application, each with an indication at its first line showing the claim's current status.

Applicant has amended claim 23 at lines 21-26, and 36 at lines 23-28 for form to clarifying their recital of selective sampling including calculating a consistency among classification results, and calculating the sampling probability based on the consistency.

I. Claim Objections

The Office Action objects to claims 23 and 36 on the basis of a missing colon (:). Applicant respectfully submits, in response, the amendment above inserting a colon at claim 23, line 17 and at claim 36, line 19.

The Office Action objects to claims 24-25, 37 and 38 on the basis of "mis-characterizing" being "not consistent" with the specific terminology recited in specification. Office Action at p. 2. Applicant respectfully submits, in response, the amendment above, changing the form of the subject term to "mis-classifying." *See* claim 24, lines 2 and 4, claim 25, lines 2-3, claim 37, lines 3 and 5, and claim 38, line 4.

Applicant respectfully requests, for the foregoing reasons, the objections to the claims be reconsidered and withdrawn.

II. Claim Rejections - 35 U.S.C. § 112, Second Paragraph

A. Rejection of Claim 23, on "Substantially Lower"

The Office Action rejects claim 23 on the stated reason that: "the phrase 'substantially lower' renders the claim indefinite." Office Action at p. 3. Applicant respectfully traverses this rejection.

Applicant respectfully submits that Applicant's "specification provides ... general guidelines ... [such that] one of ordinary skill in the art would know" the

meaning of the claim phrase "substantially lower." MPEP § 2173.05, section (D). Applicant respectfully submits, therefore, that "substantially lower" recited in claim 23 (and claim 36) meets the definiteness requirement of Section 112, second paragraph.

Applicant respectfully submits, in support, that the specification describes generating a set of classifiers by iteratively adding new classifiers to a set, each new classifier generated based on training data selectively sampled from a much larger set of data samples. As described by the specification, the selective sampling picks, as training data for the classifier to be added, data among the original data set that are proximal to the classification boundaries established by previously generated classifiers. *See* Specification, at p. 5, lines 18-20, describing that the "selective sampling module samples a relatively small subset of the data."

Applicant's specification describes two reasons for the selective sampling, which provide the necessary guidelines for definiteness under MPEP § 2173.05 for the claim 23 (and 36) phrase of "substantially lower":

(i) selective sampling "effectively reduces the amount data required ... to train the classifier," Specification, at p. 6, lines 17-28; and

(ii) selective sampling "weed[s] out synthesized positive examples that are 'unrealistic' and too easy to classify ... [and, therefore] do not help on identification of outliers in future test data." Specification, at page 6, lines 22-24Specification, at p. 7, lines 10-18.

Applicant respectfully submits that a specific numerical range of "substantially lower" is not necessary for a person of ordinary skill in the art to have a clear and definite understanding of its meaning; such a person would understand "substantially lower" to be met when the selective sampling "weed[s] out the unrealistic samples" and generates the training set with "realistic" data that the previously iterations' generated classifiers could not clearly classify.

Applicant respectfully submits, for the foregoing reasons, that the claim 23 (and claim 36) phrase of: "substantially lower" is definite within the meaning of 35 U.S.C. § 112, second paragraph.

Applicant therefore respectfully requests this rejection be reconsidered and withdrawn.

B. Rejection of Claims 30, 33, 37, 43 and 46, on "alarm criterion"

Applicant has amended claims 30, 33, 37, 43 and 46 for form, to recite: "outlier criterion." *See* claim 30, line 5; claim 33, line 5 (conforming to claim 28, lines 3-4); claim 37, line 6, claim 43, line 5-6; and claim 46, at line 6 (conforming to claim 41, lines 3-4). Applicant respectfully requests that in view these amendments the rejection based on "alarm criterion" be reconsidered and withdrawn.

C. Rejection of Claim 28, on "machine readable code"

Applicant has amended claim 28 for form to delete the identified erroneous language, and therefore respectfully requests that this rejection be reconsidered and withdrawn.

III. Rejections Based on Prior Art

The Office Action rejects claims 23, 26, 28-31, 33, 34, 36, 41-44, 46 and 47 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. US 2003/004902 A1 ("Yamanishi"). Office Action at pages 4-8.

Applicant respectfully traverses the rejection; Yamanishi lacks at least the following elements of Applicant's base claims 23 and 36:

(i) "generating a plurality of synthesized data … " – claim 23, line 2; claim 36, line 6;

(ii) "forming a candidate sample set comprising a union of at least a part of said plurality of synthesized data and said plurality of real sample data" – claim 23, lines 7-8, claim 36, lines 11-12;

(iii) "initializing said set of classifiers to be an empty set" – claim 23, line 15; claim 36, line 17;

(iv) "identifying a consistency, for each of said candidate sample data, among said data's corresponding set of classification results" – claim 23, lines 21-23; claim 36, lines 23-25; and

(v) selective sampling based on a "sampling probability ... based on said inconsistency" – claim 23, lines 27-33; claim 36, lines 32-35.

Yamanishi lacks element (i) of claims 23 and 36 because Yamanishi does not teach, disclose, or suggest acts or steps within the broadest reasonable meaning of "generating synthesized data." Yamanishi discloses labeling sample data, with no disclosure of the sample data being other than detected event data, as "positive" or "negative", based on the sample's "degree of outlier" relative to given classification rules, and then randomly sampling the "negative" samples. Yamanishi at ¶ ¶ 66 and 88.

Applicant respectfully submits that random sampling of real event data is not within the broadest reasonable meaning of the claim 23 and 36 element of "generating synthesized data." Applicant respectfully submits that the Office Action's position of Yamanishi at ¶ 66 and 88 being a disclosure of "generating a synthesized data" is a misinterpretation Yamanishi and/or of Applicant's claim language. For purposes of expediting the examination, and to remove any possible ambiguity, Applicant has amended claims 23 and 36, for form, to more positively recite the synthesized data as "representing a randomly generated state." Claim 23, lines 2-3; claim 37, lines 6-7.

Yamanishi lacks element (ii) of claims 23 and 36 because Yamanishi does not disclose, teach or suggest generating "synthesized data" and, therefore, does not and cannot disclose, teach or suggest anything of" forming ... a union of ... of synthesized data and said plurality of real sample data."

Yamanishi lacks element (iii) of claims 23 and 36 because Yamanishi's method does not, and cannot "initializ[e] said set of classifiers to be an empty set." Having a given classifier to label data as "positive" or "negative" is a necessary condition for Yamanishi's method to operate. *See* Yamanish, e.g., at ¶¶ 62, 63, 64, 65, 66, 67, 69, 70, 79, 80, 81, 94 and 95. Stated differently, Yamanishi's method must start with a non-zero set classifiers. Lacking a starting classifier, Yamanishi's method cannot perform the labeling of "positive" and "negative," which is necessary for selecting a training data set. *See* Yamanishi, e.g., at ¶¶ 66, 88.

Yamanishi's method lacks element (iv) of claims 23 and 36 because it does not disclose, teach or suggest calculating anything based on consistency of results from a plurality of classifiers. Yamanishi discloses blocks 12 and 22 that calculate a "degree of outlier" based on a "degree of outlier" relative to given rules. Although Yamanishi is silent in defining "degree of outlier" or its method of calculation, Applicant respectfully submits that it appears to be a geometric distance from a threshold or from a cluster point. Regardless of such speculation as to Yamanishi's teaching, this conclusion is supported by reading Yamanishi as a whole: it not disclose, teach or suggest calculating anything based on consistency of results from a plurality of classifiers.

The Office Action's position is that Yamanishi at ¶¶ 71-75 and 77 discloses a "calculating of said uncertainty value includes identifying a consistency among said set of classification results. " Office Action at pp. 5-6. Applicant's careful study of the identified paragraphs, and Yamanishi as a whole, cannot identify the language supporting the Office Action's position. Applicant therefore respectfully submits the Office Action's position may be a misreading of Yamanishi. Therefore, to provide Applicant proper opportunity to respond, Applicant respectfully requests the Examiner to clarify the basis for this position.

Yamanishi's method lacks element (v) of claims 23 and 36 because Yamanishi uses as "positive" training data all "abnormal" data having a high degree of outlier, and uses as "negative" training data only random subset of data not having a high degree of outlier. *See* Yamanishi at ¶ 66. This is opposite to the selective sampling recited by Applicant's claims 23 and 36.

The Office Action's position is that Yamanishi at ¶¶ 66-69 and 87 disclose a "selective sampling" as recited by claims 23 and 36. *See* Office Action at pp. 4-5 and 7-8. Applicant respectfully requests the Examiner to reconsider this position, as it appears to be a misinterpretation of Yamanishi.

In support of Applicant's request, Applicant submits that Applicant's claims 23 and 36 define selective sampling based on uncertainty; uncertainty increases as data becomes more proximal to the classification boundaries between "outlier" and "non-outlier."

Turning to Yamanishi, its teaching is that data proximal to a boundary or demarcation between its "normal" and "abnormal" is given a lower "outlier" value (using Yamanishi's terminology) than data more clearly "abnormal." Applicant respectfully submits this to be indisputable. Continuing with Yamanishi, its selective sampling "takes out" all of the data with a high degree of outlier (i.e., data that is highly abnormal), labels it as "positive (i.e., a fault) and uses it for a training set. *See* Yamanishi, at ¶ 66. In other words, Yamanishi's sampling rate (in terms of percentage) for highly abnormal data is 100 percent. According to Yamanishi, data that is not highly abnormal, in contrast, is only randomly sampled, i.e., sampled at a rate less than 100 percent. To the extent this sampling can be compared to Applicant's claim 23 and 36 "selective sampling," it is opposite

Applicant respectfully requests, for the foregoing reasons, including Yamanishi lacking the above-enumerated elements (i) through (v), that the rejection of base claims 23 and 36 be reconsidered and withdrawn.

Claims 26, 28-31, 33 and 34 depend from claim 23, and that claims 41-44, 46 and 47 depend from claim 36. Applicant therefore respectfully requests, for at least the reasons Applicant has presented with respect to claims 23 and 36, that the rejection of claims 26, 28-31, 33, 34, 41-44, 46 and 47 be reconsidered and withdrawn.

The Office Action rejects claims 24, 25, 27, 32, 35, 37, 38, 40, 45, and 48 under 35 U.S.C. § 103(a) as being unpatentable over Yamanishi as applied to base claims 23 and 36 (and to the other claims rejected as anticipated by Yamanishi), in view of U.S. Patent No. 6,728,690 ("Meeks"). *See* Office Action at pp. 9-10.

Applicant respectfully traverses the rejection as not supported by the references relied upon.

First, claims 24, 25, 27, 32 and 35 depend from claim 23, and claims 37, 38, 40, 45, and 48 depend from claim 36. The primary reference, Yamanishi, lacks at least the five (5) elements of claims 23 and 36 Applicant has enumerated above.

Meeks is not cited by the Office Action as a teaching of any of these five elements of base claims 23 and 36 lacking in Yamanishi.

Stated with more specificity, Meeks does not teach, and is not relied upon as a teaching of, any of the following:

(i) "generating a plurality of synthesized data" – claim 23, line 2; claim 36, line 6;

(ii) "forming a candidate sample set comprising a union of at least a part of said plurality of synthesized data and said plurality of real sample data" – claim 23, lines 7-8, claim 36, lines 11-12;

(iii) "initializing said set of classifiers to be an empty set" – claim 23, line 15; claim 36, line 17;

(iv) "identifying a consistency, for each of said candidate sample data, among said data's corresponding set of classification results" – claim 23, lines 21-23; claim 36, lines 23-25; or

(v) selective sampling based on a "sampling probability ... based on said inconsistency" – claim 23, lines 27-33; claim 36, lines 32-35.

Applicant respectfully submits that, for at least the reasons above, the combination of Yamanishi and Meeks cannot support a rejection under 35 U.S.C. § 103(a) of any of the base claims 23 and 36.

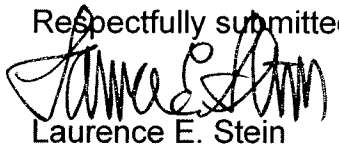
Applicant therefore respectfully submits that, for at least the reasons above, the combination of Yamanishi and Meeks cannot support a rejection under 35 U.S.C. § 103(a) of any of the dependent claims 24, 25, 27, 32, 35, 37, 38, 40, 45, and 48.

IV. Conclusion

In view of the foregoing, Applicant respectfully requests claims 23-48 be allowed, and that the application be passed to issue. Should the Examiner find the application to be other than in condition for allowance, the Examiner is respectfully requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-0510.

Respectfully submitted,



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